

## **REMARKS**

### **I. Introduction**

Claims 1-13 and 15-17 are currently pending in the present application. By the present amendment, claims 3, 5 and 6 have been amended, and claim 14 has been cancelled. No new matter has been added by the present amendment. Applicants point out that the amendments made herein are made without prejudice to the future prosecution of such cancelled, amended or modified subject matter in a related divisional, continuation or continuation-in-part application.

In view of the foregoing amendments and the following remarks, Applicants respectfully submit that the claims are now in condition for allowance.

### **II. Rejection of Claims 3, 5, 6, and 14 under 35 U.S.C. § 112, Second Paragraph**

Claims 3, 5, 6, and 14 stand rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In the present amendment, claims 3, 5 and 6 have been amended to remove the phrase beginning with "preferably," and claim 14 has been canceled. Therefore, it is respectfully submitted that these rejections should be withdrawn for at least the preceding reasons.

### **III. Rejection of Claims 1-11 and 13-16 Under 35 U.S.C. § 103(a)**

Claims 1-11 and 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,232,412 ("Raspanti et al.") in view of EP 0821008 ("Nakamura et al.") and US Patent No. 5,674,953 ("Masuko et al."). It is respectfully submitted that these rejections should be withdrawn for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial

burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143; see also *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 934 (Fed. Cir. 1990), *cert. denied*, 111 S. Ct. 296 (1990); *In re Bond*, 910 F.2d 831, 834 (Fed. Cir. 1990). In addition, as recently indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). Moreover,

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and to the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

*Id.* Furthermore, all the teachings of the prior art must be considered, including those which teach away from the claimed invention. See MPEP § 2143.01.II.

The present invention is directed to a method for applying an aqueous solution to the internal walls of a reactor for polymerizing vinyl chloride and/or vinyl acetate. In accordance with the method of the present invention as currently recited in independent claim 1, the aqueous solution contains a salt of an anti-scaling agent which comprises a product of condensation of an aldehyde, a phenolic compound and an aromatic carboxylic acid hydroxylated at the aromatic nucleus, the method being characterized in that *the pH-value of this aqueous solution is changed to a pH-value of less than 5.* (emphasis added).

Raspanti et al. is a member of the same patent family as EP 0 942 936, the disclosure of which is discussed on pages 1 and 3 of the present specification. EP 0 942 936 describes an anti-scaling agent which comprises a product of condensation of (preferably) formaldehyde, 1-naphthol, and 2, 4-dihydroxybenzoic acid. Example 25 of EP 0 942 936 refers to a basic aqueous solution having a brown color and a pH-value of between 11 and 12.4, which is applied to the internal walls of the reactors by spraying in a vapor stream. See present specification, pages 1, 3. In addition, Raspanti et al. teaches preparing the anti-scaling agents disclosed therein in an aqueous basic solution with a pH between about 8 and about 13.5. See Raspanti et al., col. 4, lines 1-31. However, as acknowledged in the Office Action, "Raspanti et al. does not teach that the pH value of the aqueous solution is changed to a pH of less than 5." (Office Action mailed 6/12/07, page 3).

Masuko et al. and Nakamura et al. each relate to methods of polymerizing vinyl chloride wherein a coating agent is applied which is in the form of an aqueous solution of a modified condensation product of phenol and aldehyde. Neither Masuko et al. nor Nakamura et al. disclose anti-scaling agents being a condensation product of an aldehyde, a phenolic compound, and an aromatic carboxylic acid hydroxylated at the aromatic nucleus. As such, the anti-scaling agents disclosed in Masuko et al. and Nakamura et al. belong to a different class of anti-scaling agents than those described in Raspanti et al. This is apparent from the difference in their anti-fouling activity, as discussed in Raspanti et al. (see Raspanti et al., col. 1, lines 22-54). More particularly, as disclosed in Raspanti et al., the anti-scaling agents which are a condensation product of an aldehyde, a phenolic compound, and an aromatic carboxylic acid hydroxylated at the aromatic nucleus show a remarkable improvement in anti-scaling behavior as compared to the previously known anti-scaling agents (see Raspanti et al., col. 2, lines 1-20).

Therefore, although the Office Action alleges that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Raspanti et al. with the pH ranges of Masuko et al. and Nakamura et al. in order to avoid an inadequate polymer adhesion preventative effect," Applicants respectfully disagree. First of all, there would be no reason for one of ordinary skill in the art to

combine the teachings of Raspanti et al. with those of Masuko et al. and Nakamura et al., as Raspanti et al. are directed to a different class of anti-scaling agents than those of Masuko et al. and Nakamura et al. Secondly, there would be no reason for one of ordinary skill in the art to modify Raspanti et al. with the pH ranges of Masuko et al. and Nakamura et al. because Raspanti et al. is allegedly directed to an improved class of anti-scaling agents as compared to those disclosed in Masuko et al. and Nakamura et al. In fact, Raspanti et al. actually teaches away from such a modification by expressly limiting the preparation of the anti-scaling agents disclosed therein to be in an aqueous basic solution. See Raspanti et al., col. 4, lines 1-31.

Applicants also respectfully submit that the Examiner's conclusion of obviousness is improperly based on hindsight reasoning. See *In re McLaughlin*, 443 F.2d 1392, 170 U.S.P.Q. 209 (C.C.P.A. 1971). That is, the Examiner has not pointed to any reason for one of ordinary skill in the art to combine and modify these publications in order to arrive at the presently claimed method, other than summarily stating that it would have been done "in order to avoid an inadequate polymer adhesion preventative effect." (Office Action mailed 6/12/07, page 3). However, as explained above, Raspanti et al. teaches improved anti-scaling agents, being prepared in an aqueous basic solution. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Although the Applicants' own disclosure teaches the desirability of the specifically claimed method at the specifically claimed pH value, the Examiner may not properly rely upon "knowledge gleaned only from Applicant's disclosure" in constructing the obviousness rejection. *In re McLaughlin*, 443 F.2d 1392, 1395, 170 U.S.P.Q. 209, 212 (C.C.P.A. 1971).

Furthermore, as stated in the present specification and as demonstrated in the examples therein, the method of the present invention provides definitive advantages over the prior art methods. For example, the method of the present invention results in a product which "can therefore be readily applied to the internal walls of a reactor for polymerizing vinyl chloride and/or vinyl acetate, thereby forming a protective film which adheres to the walls at a rate greater than 12% by weight

relative to the quantity loaded. In this manner, it is thus possible adequately to protect the reactor by eliminating almost completely the formation of deposits even after long periods of activity; thereby minimizing the necessity of interrupting the production cycle to allow the installation to be cleaned; the large quantity of anti-scaling agent which remains attached to the wall further allows a reduction in the quantity of anti-scaling agent to be used, with obvious economic advantages.” Specification, page 5, lines 19-32.

Thus, for at least the preceding reasons, it is respectfully submitted that the pending claims are not rendered obvious by the combination of the cited publications, and thus Applicants respectfully request that the claim rejections under 35 U.S.C. § 103(a) be withdrawn.

#### **IV. Conclusion**

It is respectfully submitted that all pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,  
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